CHAPTER 6
REPORTING REQUIREMENTS

To fulfill SI reporting requirements, the SI investigator should complete two work products: a narrative report and scoresheets. The narratiye report summarizes the findings of the field investigation, particularly the contamination associated with the site and migration pathways. The scoresheets evaluate the data according to the HRS. Scoresheets are considered preliminary and deliberative, and, as such, are confidential. They should not be attached to the narrative report and may not be released until EPA makes a final site disposition decision.

6.1 NARRATIVE REPORT

After scoring the site, the investigator prepares a narrative report summarizing what is known about the site, the activities conducted during the SI, and all information researched. The report should:

- Describe the history and nature of waste handling at the site;
- Describe known hazardous substances;
- Describe pathways of concern for these substances;
- Identify and describe human population and environmental targets; and
- Present SI analytical results.

EPA and other agencies will refer to the narrative report during future site evaluations. Following EPA Regional guidelines, the report may be a letter report or a stand-alone document transmitted under separate cover. Factual statements in the report should be keyed by number to supporting references attached to the report. References not generally available to the public also should be attached. Information that rules out specific factors (e.g., "No sensitive environments were identified within 4 miles of the site") should be included and documented.

The structure and content of each SI report should follow the suggested format provided in the annotated outline (Exhibit 6-1) or as recommended per Regional guidelines. The body of the report begins with site and source characterization and moves logically through threats and targets associated with each pathway. The Summary and Conclusion section summarizes the most important characteristics of the site and identifies significant pathways and targets. Depending on the complexity of the site and the amount of information presented, narrative text may range from 10 to 12 pages and up to 20 pages, excluding attachments and references. All reports and scoresheets should include a numbered reference list and attached references.

The narrative report is a public information resource that describes the steps taken to inspect the site and provides information on the site based on EPA's inspection. It should contain sufficient information and documentation to support EPA's site disposition recommendation. For sites not warranting further investigation, this means demonstrating that further Superfund activity is not necessary. For sites warranting further investigation, this means demonstrating sufficient cause for additional response. In either case, the SI report serves as the basis for subsequent planning.

The SI report should be restricted to factual statements. SI scores and site recommendations, which EPA considers deliberative and protected from disclosure, should not be included or referred to in the report. The investigator should check with EPA Regional officials to ensure that the SI report is consistent with current EPA policy on releasable information. The summary and conclusion should summarize the major findings of the field investigation and highlight objective data supporting major conclusions. This section should discuss all hazardous substances detected in sources at the site and in samples from the migration pathways and the soil exposure pathway.

Avoid using HRS terminology in the narrative report. While many HRS factors may be discussed, the investigator should not refer to them as "factors," or cite the HRS. The narrative report is a record of the investigation that lay persons and interested citizens

EXHIBIT 6-1: SI NARRATIVE REPORT FORMAT

INTRODUCTION

- State that an SI was performed, the name of the agency performing it, and the authority under which it was conducted (e.g., CERCLA as amended by SARA, and EPA contract or cooperative agreement).
- State the site name, CERCLIS identification number, and location (street address, city, county, State, latitude/longitude coordinates). If necessary, provide brief directions to the site.
- State the purpose, scope, and objectives of the SI.

SITE DESCRIPTION AND REGULATORY HISTORY

- Identify the type of site (e.g., plating facility, chemical plant, municipal landfill), whether it is active or inactive, and years of operation. Describe its physical setting (e.g., topography, local land uses). Include the appropriate portion of a USGS 7.5-minute topographic map locating the site and showing a 1-mile radius. On the map, identify the surface water drainage route; nearest well, drinking water intake, and residence; and wetlands and other sensitive environments. Include a drafted sketch showing site layout, source areas, and features on and around the site.
- Briefly summarize dates and scope of previous investigations.
- Describe prior land use and past regulatory activities including the site's RCRA status, permits, permit violations, and inspections by local, State, or Federal authorities. Discuss any citizen complaints.

OPERATIONAL HISTORY AND WASTE CHARACTERISTICS

- Provide an operational history of the site. Identify current and former owners and operators, and describe site activities. Identify and describe wastes generated, waste disposal practices, waste source areas, waste source containment, and waste quantities. Indicate source areas on the site sketch.
- Discuss any previous sampling at the site; provide dates of sampling events and sample types. Summarize analytical results in a table. Include a site map of all previous sample locations.
- Discuss SI source sampling results. List in a table each waste source sample and summarize analytical results. Include a site map of all waste source and pathway sample locations.
- Identify hazardous substances associated with sources.
- Describe accessibility to source areas.

GROUND WATER

- Describe the local geologic and hydrogeologic setting (e.g., stratigraphy, formations, aquifers, karst features, confining layers, depth and permeability to each aquifer).

EXHIBIT 6-1: SI NARRATIVE REPORT FORMAT (continued)

GROUND WATER (continued)

- Discuss ground water use within a 4-mile radius of the sources. Identify the nearest private and municipal drinking water wells and state the distance from sources. Quantify drinking water populations served by wells within 4 miles, differentiating between private and municipal wells and specifying aquifers. Identify any municipal wells that are part of a blended system; state number of wells, locations, pumping rates, and aquifer from which water is drawn. Identify wells in karst aquifers.

- Identify designated wellhead protection areas (WHPA) and specify location.

- Discuss any previous ground water sampling results; provide dates of sampling events and the depths and names of sampled aquifers.

- List in a table each well or spring sampled during the SI, provide the depth from which it draws drinking water and the screened interval, quantify the population associated with it, and identify its distance from site sources. Discuss SI ground water sampling results. List in a table each sample and summarize analytical results. Include a site map of sample locations. Identify drinking water wells exposed to hazardous substances and quantify the drinking water populations served by each.

SURFACE WATER

- Describe the local hydrologic setting, including site location with respect to floodplains, and the overland and in-water segments of the surface water migration path. State the distance from the site to the probable point of entry (PPE) into surface water. Identify the water bodies within the in-water segment, and state the length of reach and flow or depth characteristics of each; describe tidal influence. Include a drafted sketch of the surface water migration path. Describe upgradient drainage areas, onsite drainage (including storm drains, ditches, culverts, etc.), facility discharges into surface water, permits, and historical information, including floods, fish kills, fishery closures, and other events.

- Indicate whether surface water within the target distance limit supplies drinking water. Identify the location and state the distance from the PPE to each drinking water intake. Quantify the drinking water population served by surface water and identify blended systems.

- Indicate whether surface water within the target distance limit contains fisheries. Identify and state the distance from the PPE to each fishery; briefly characterize each fishery.

- Indicate whether sensitive environments are present within or adjacent to the in-water segment. Identify and state the distance from the PPE to each sensitive environment. Describe each sensitive environment and state the frontage length of wetlands on surface water.

- Discuss any previous surface water sampling results, dates, locations, and types of samples.

- Discuss SI surface water sampling results. List in a table each sample and summarize analytical results. Identify surface water intakes exposed to hazardous substances and quantify the drinking water populations served by each. Identify fisheries exposed to hazardous substances and quantify the food chain population associated with each. Identify sensitive environments and wetlands exposed to hazardous substances; quantify the frontage of exposed wetlands.

EXHIBIT 6-1: SI NARRATIVE REPORT FORMAT (continued)

SOIL EXPOSURE

- State the number of workers on properties with site-related contamination.
- State the number of people who live on properties with site-related contamination and within 200 feet of an area of observed contamination. State the hazardous substance concentration and compare to health based benchmarks.
- Identify schools and day care facilities within 200 feet from an area of observed contamination on the school property and state the number of attendees.
- Identify terrestrial sensitive environments and resources in an area of observed contamination.
- State the number of people who live within 1 mile travel distance of the site.
- Discuss any previous sampling results of sources of surficial materials, including dates and locations.
- Discuss SI surficial source samples. List each sample in a table and summarize analytical results.

AIR

- Identify the location of, and state the distance to, the nearest individual. State the population within 4 miles of the site, including students and workers. Identify sensitive environments on sources and within 4 miles.
- Discuss any previous air sampling results, including dates, locations, sampling procedures, and meteorological conditions.
- Discuss SI air sampling procedures and results. Identify sample locations on a map. List in a table each sample and summarize analytical results.

SUMMARY AND CONCLUSION

- Briefly summarize the major aspects of the site and its history that relate to the release or threatened release of hazardous substances and the exposure of targets. Briefly summarize principal pathways and targets of concern.
- Summarize sampling results, including substances detected in site sources and in environmental media.

PHOTODOCUMENTATION LOG

- As an attachment, provide photographs of the site taken during the SI depicting pertinent site features such as waste source areas, containment conditions, stained soil, stressed vegetation, drainage routes, and sample locations. Describe each photograph in captions or accompanying text. Key each photo to its location on the site sketch.

EXHIBIT 6-1: SI NARRATIVE REPORT OUTLINE (concluded)

APPENDICES

- Analytical results reports
- QA Report
- Other attachments

REFERENCES

- List, in bibliographic citation format, all references cited in the SI report.
- Attach copies of references cited in the SI report. Include complete copies of site-specific references (e.g., USGS topographic maps, records of communication, drinking water population apportionment and calculation worksheets, GEMS and other database printouts, waste handling records or shipping manifests). Include only the title page and pertinent excerpts of publicly available references (e.g., geologic reports).

should be able to read and understand. The report should not refer to HRS values or scores.

6.2 SCORE AND DOCUMENTATION

Prior to documenting the SI score, the investigator should complete a preliminary site score, review all pathway scores, and verify key HRS factors or scoring considerations. Personnel with HRS experience should be consulted to check the score. All relevant additional information should be collected before preparing a final SI score.

When developing the SI score, the investigator should start with general site information, followed by source characteristics, and then individual pathway information. Assumptions used in scoring should be supported by references, field observations, and other notes. These materials should be well-organized and clear to reviewers and EPA Regional and State officials.

Several tools are available to score the site (see Section 5.4.1), including SI worksheets (see Appendix C and *PREscore*. The SI worksheets contain brief instructions and tables to record the results of SI samples and other analytical data. They provide HRS tables and minimum tools to apply collected data and develop a rough (preliminary or site screening) SI score. Alternatively, *PREscore*-generated HRS scoresheets may be submitted with the SI narrative report to fulfill reporting requirements.

Analysis of a preliminary site score should focus on factors that require data collection during the SI or additional investigation. The investigator should judge whether sampling is justified. The sample plan should be designed to support the site score, with each sample serving a specific purpose. For example:

> The preliminary site score developed at the end of the focused SI was 20.00. The investigator noted that a municipal well approximately 600 feet away from the site was evaluated as Level II contamination although hazardous substance concentrations approached benchmark levels. The investigator proposed resampling the municipal well and two additional wells during the expanded SI, because if these wells were found to be contaminated above benchmark levels (i.e., Level I), the site score would increase to 50.00.

Additional evaluation of the SI results may be necessary if analytical data are inadequate and the

investigator is unable to fully meet the SI objectives for scoring. If additional evaluation is warranted, the SI investigator should consult with EPA Regional officials before completing the site score or drafting the SI narrative report. Further investigation, such as collecting additional samples or performing special field activities, may be necessary to obtain better information for scoring. If so, the scope of the follow up investigation could be reduced to the essentials, with the previous SI results used in planning these activities. Table 6-1 provides action options for situations where additional evaluation may be needed.

6.3 REVIEWS

Review of the SI report and scoresheets involves evaluation by three parties, each with particular functions.

- The SI investigator should perform a detailed review of the SI report and scoresheets, particularly for completeness and internal consistency.

- A reviewer with considerable site assessment experience should examine these materials to provide an independent evaluation of the SI results and should determine whether the available analytical data are open to any alternative interpretations that would significantly affect site scoring.

- EPA Regional officials or State personnel should review the draft narrative report, SI scoresheets, and other materials to ensure that the results are reasonable and reflect site conditions. The final review should verify that the SI meets its objectives and that the appropriate hypotheses were tested.

After the three part review, the SI reports and materials can be finalized.

SI review ensures an appropriate site recommendation. For sites receiving SEA recommendations, the review should confirm that the judgments and data reasonably support the conclusion that the site poses little threat or that EPA will address the site under other statutes. For sites receiving further action recommendations, the review ensures that the SI results reasonably support the need for further investigation.

Some sites may require a more detailed review of the site score and analytical results to ensure that a recommended follow up investigation is warranted. Furthermore, the review will evaluate the need for subsequent investigation, such as installing monitoring wells, collecting additional soil samples, and collecting more non-sampling information.

After the review of a focused SI, EPA makes one of three recommendations:

- SEA;
- Further action (e.g., expanded SI) recommended; or
- Priority for preparation of HRS package.

Screening recommendations are usually made by comparing the focused SI score to 28.50. In certain cases, some form of further action other than the expanded SI may be appropriate—for example, a site where a domestic well is contaminated but lacks sufficient users to result in a site score greater than the cutoff score. In such a case, it may be prudent to recommend that the local health department, or other authority, be appraised of the situation. At any site, emergency response action may be recommended regardless of site score.

After the review of the expanded SI, EPA Regional management will determine the priority for preparation of an HRS package. If the site is being considered for the NPL, EPA will establish a schedule to prepare the HRS package, which consists of the HRS documentation record, reference materials, and site narrative summary along with other administrative requirements (see *Regional Quality Control Guidance for NPL Candidate Sites*, OSWER Directive 9345.1-08, 1991). Preparation of the HRS package is outside the scope of SI activities.

TABLE 6-1: ADDITIONAL EVALUATION OF SI RESULTS

CONDITION	POSSIBLE ACTIONS
Analytical data do not meet appropriate DUCs for screening	Consider using data to refine or reformulate site hypotheses Consider scoring the site based on potential to release to migration pathways Use *PREscore* to determine factors that will significantly affect site score after evaluating substance-specific waste characteristics (e.g., toxicity, mobility, persistence) Use SI worksheets or other scoring tools to estimate site score based on reasonable projections to screen the site Consider another investigation similar in scope to the previous SI
Analytical data do not meet appropriate DUCs for listing	Consider using data to screen the site from further action Consider using data to refine or reformulate site hypotheses Consider collecting additional non-sampling information Use *PREscore* to determine factors that will significantly affect pathway or site score after evaluating substance-specific waste characteristics (e.g., toxicity, mobility, persistence) Consider resampling at site
Some analytical data do not fully support site score for screening or listing	Consider if the data significantly affect the pathway or site score Consider scoring the pathways based on potential to release, particularly ground water or surface water pathways
Hazardous substances used to score observed releases or targets exposed to actual contamination are not conclusively attributable to the site	Review operational histories of nearby sites Consider expanding the site description to include other sources, if possible Evaluate whether these hazardous substances are naturally-occurring or ubiquitous or are significantly higher than regional or local levels
Analytical data support Level II contamination for some targets but Level I contamination is needed to achieve a site score $28.50	Review the hazardous substances detected at the Level II target; determine if media-specific benchmarks are available for those substances If benchmarks are available, consider resampling at a few, non- random locations

TABLE 6-1: ADDITIONAL EVALUATION OF SI RESULTS (concluded)

CONDITION	POSSIBLE ACTIONS
Analytical data support Level I contamination for some targets but not enough targets for a site score $28.50	Examine concentrations of hazardous substances detected at Level I targets; review whether such concentrations are likely at other targets not sampled If such concentrations are likely, consider sampling at additional locations
Score is just below 28.50 based on significant pathways	Consider evaluating all four pathways based on non-sampling information Consider collecting additional samples